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Case No. CE10711R

Amendments to the Claims:

1.   (Currently Amended) A method for specially handling messages addressed to multiple mobile nodes in a wireless communication system comprising a home agent serving a home subnet and a foreign agent serving a foreign subnet, the home agent communicating with the foreign agent through a plurality of unicast tunnels corresponding to a plurality of mobile nodes served by the foreign agent, the method comprising:

establishing [[a]] at least one special communications channel separate from the unicast tunnels between the home agent and the foreign agent, the special communications channel dedicated to messages addressed to multiple mobile nodes;

detecting whether a message received by the home agent is addressed to multiple mobile nodes; and

when the message is addressed to multiple mobile nodes, sending the message to the foreign agent through the special communications channel.

2.   (Original) The method of claim 1,

wherein the messages addressed to multiple mobile nodes can include Broadcast messages and Multicast messages, and

wherein detecting whether the message received by the home agent is addressed to multiple mobile nodes comprises detecting whether the message is addressed as one of a Broadcast message and a Multicast message.

3.   (Original) The method of claim 1,

wherein establishing the special communications channel comprises establishing a first channel for Broadcast messages and a second channel for Multicast messages, and

wherein sending the message to the foreign agent comprises sending a Broadcast message through the first channel and sending a Multicast message through the second channel.

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4.   (Original) The method of claim 1,

wherein establishing the special communications channel comprises establishing a single channel for sending both Broadcast messages and Multicast messages, and

wherein sending the message to the foreign agent comprises sending the message through the single channel when the message is one of a Broadcast message and a Multicast message.

5.   (Original) The method of claim 1, wherein establishing the special communications channel comprises opening an IP-in-IP tunnel between the foreign agent and the home agent for receiving the messages addressed to multiple mobile nodes.

6.   (Original) The method of claim 1, wherein establishing the special communications channel comprises opening a minimal encapsulation tunnel between the foreign agent and the home agent for receiving the messages addressed to' multiple mobile . nodes.

7.   (Original) The method of claim 1, wherein establishing the special communications channel comprises opening a Generic Routing Encapsulation (GRE) tunnel between the foreign agent and the home agent for receiving the messages addressed to multiple mobile nodes.

8.   (Original) The method of claim 1,

wherein the wireless communication system comprises a plurality of foreign agents coupled to the home agent, and

wherein the method further comprises monitoring, by the home agent, Multicast Join messages sent from some of the plurality of mobile nodes, and

wherein sending the message to the foreign agent comprises sending Multicast traffic only to ones of the plurality of foreign agents that serve a mobile node that has sent one of the Multicast Join messages.

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9. (Original) The method of claim 1, further comprising in the foreign agent:

monitoring Multicast Join messages sent from some of the plurality of mobile nodes; and

sending Multicast traffic only to ones of the plurality of mobile nodes that have sent one of the Multicast Join messages.

10. (Original) The method of claim 1, wherein establishing the special communications channel comprises:

sending a Registration message from one of the plurality of mobile nodes to the foreign agent;

appending, by the foreign agent in response to the Registration message, an extension to the Registration message to create an appended Registration message, the extension advertising support for the special communications channel; and

forwarding the appended Registration message from the foreign agent to the home agent.

11. (Original) The method of claim 10, wherein establishing the special communications channel further comprises by the home agent in response to receiving the extension:

responding to the foreign agent with an indication that the home agent supports the special communications channel.

12. (Currently Amended) A wireless communication system for specially handling messages addressed to multiple mobile nodes, the wireless communication system comprising:

a home agent for communicating with a foreign agent through a plurality of unicast tunnels corresponding to a plurality of mobile nodes served by the foreign agent, wherein the home agent is arranged and programmed to:

establish [[a]] at least one special communications channel between the home agent and the foreign agent, the special communications channel

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dedicated to messages addressed to multiple mobile nodes <u>and wherein the special</u>
<u>communications channel is separate from the unicast tunnels;</u>

   detect whether a message received by the home agent is
addressed to multiple mobile nodes; and

   when the message is addressed to multiple mobile nodes,
send the message to the foreign agent through the special communications channel.

  13. (Original) The wireless communication system of claim 12, wherein the
home agent is further arranged and programmed to:

   establish a first channel for Broadcast messages and a second
channel for Multicast messages, and

   send a Broadcast message through the first channel and a Multicast
message through the second channel.

  14. (Original) The wireless communication system of claim 12, wherein the
home agent is further arranged and programmed to:

   establish a single channel for sending both Broadcast messages and
Multicast messages; and

   send the message received by the home agent through the single
channel when the message is one of a Broadcast message and a Multicast message.

  15. (Original) The wireless communication system of claim 12,

   further comprising a plurality of foreign agents coupled to the
home agent, and

   wherein the home agent is further arranged and programmed to:

   monitor Multicast Join messages sent from some of the
plurality of mobile nodes, and

   send Multicast traffic only to ones of the plurality of
foreign agents that serve a mobile node that has sent one of the Multicast Join messages.

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16.   (Original) The wireless communication system of claim 12, further comprising the foreign agent, wherein the foreign agent is further arranged and programmed to:

monitor Multicast Join messages sent from some of the plurality of mobile nodes; and

send Multicast traffic only to ones of the plurality of mobile nodes that have sent one of the Multicast Join messages.

17.   (Original) The wireless communication system of claim 12, further comprising the foreign agent, wherein the foreign agent is further arranged and programmed to:

receive a Registration message from one of the plurality of mobile nodes;

append, in response to the Registration message, an extension to the Registration message to create an appended Registration message, the extension advertising support for the special communications channel; and

forward the appended Registration message to the home agent.

18.   (Original) The wireless communication system of claim 17, wherein the home agent is further arranged and programmed, in response to receiving the extension, to:

respond to the foreign agent with an indication that the home agent supports the special communications channel.

19.   (Original) A software program comprising executable instructions for specially handling messages addressed to multiple mobile nodes in a wireless communication system including a home agent serving a home subnet and a foreign agent serving a foreign subnet, the home agent communicating with the foreign agent through a plurality of unicast tunnels corresponding to a plurality of mobile nodes served by the foreign agent, wherein the software program, when executed in the home agent, programs the home agent to:

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establish a special communications channel between the home agent and the foreign agent, the special communications channel dedicated to messages addressed to multiple mobile nodes <u>wherein the special communications channel is separate from the unicast tunnel</u>;

detect whether a message received by the home agent is addressed to multiple mobile nodes; and

when the message is addressed to multiple mobile nodes, send the message to the foreign agent through the special communications channel.

20.   (Original) The software program of claim 19,

wherein the messages addressed to multiple mobile nodes can include Broadcast messages and Multicast messages, and

wherein the software program further programs the home agent to detect whether the message received by the home agent is addressed as one of a Broadcast message and a Multicast message.

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